



Use of the Evidence-Based Fitness-to-Drive Screening Measure (FTDS) for At-risk Older Drivers

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Disclosure

- The presenter does have an interest in providing paid education courses on Older Drivers to Health Care Professionals.

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Overview

- Older driver characteristics
- Measurement theory
- Psychometrics
- Keyforms
- Three case studies

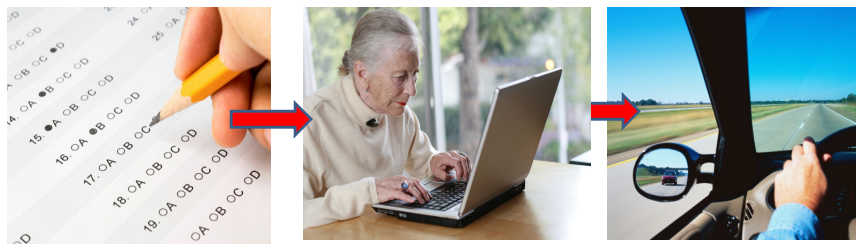
Older Driver

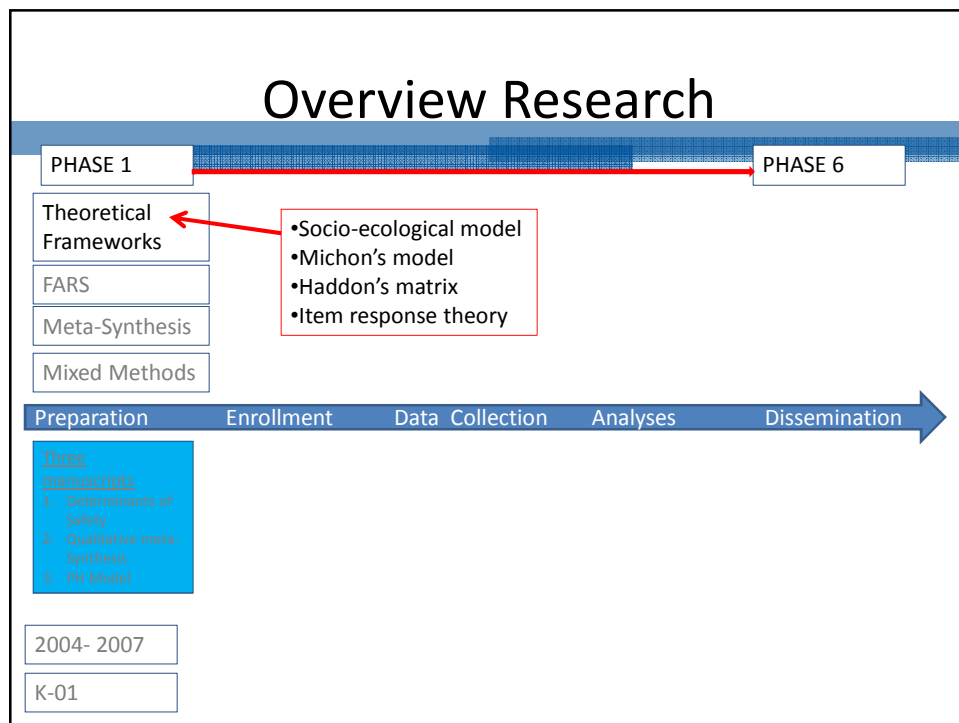
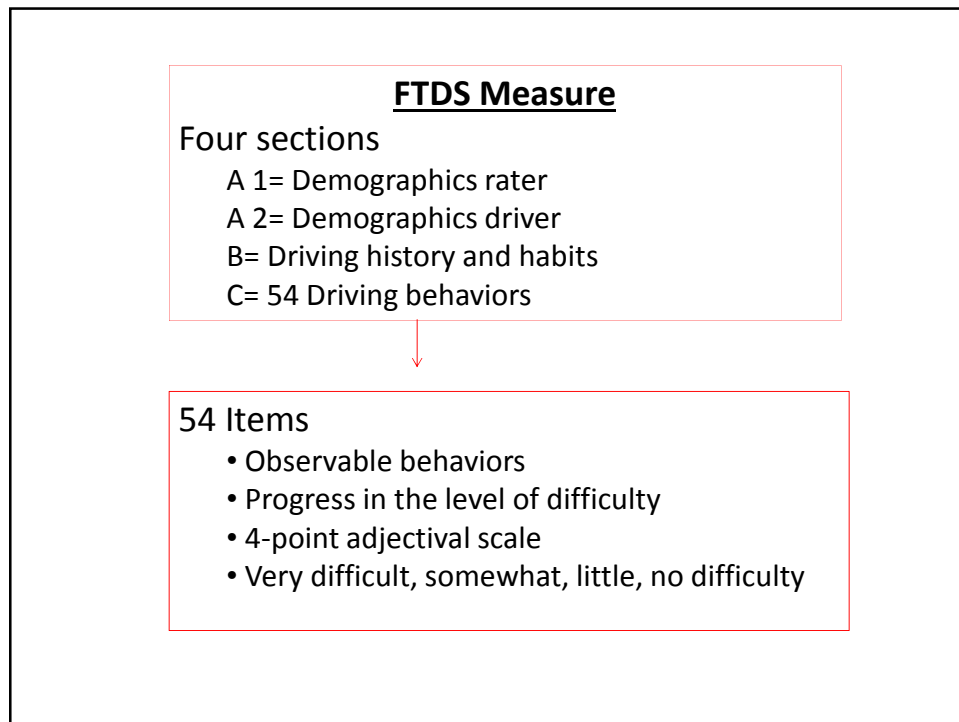
- Older drivers are overall safe
- A high risk group
 - Chronic Conditions
 - Comorbidities
 - Frailty
 - Medications
 - Age related decline (cog, vision, motor responses)
- Driving longer
- Effects of driving cessation
- Capacity problem to evaluate
- Access
- On-road assessment
 - Benefits
 - Limitations
- Overcome these issues.....

Fitness-to-Drive Screening Measure

<http://fitnesstodrive.php.ufl.edu/>

- Developed a paper and pen version
- Web-based
- To identify at-risk older drivers





Item Response Theory (IRT)

- Item development
 - Items reflect different amounts of safe driving
 - Pre-driving items reflect “easy items”
 - Challenging driving situations should reflect “difficult items”
 - Persons who “pass” more difficult items should be successful with easier items



Rasch Formula

$$\log [P_{ni}/1-P_{ni}] = B_n - D_i$$

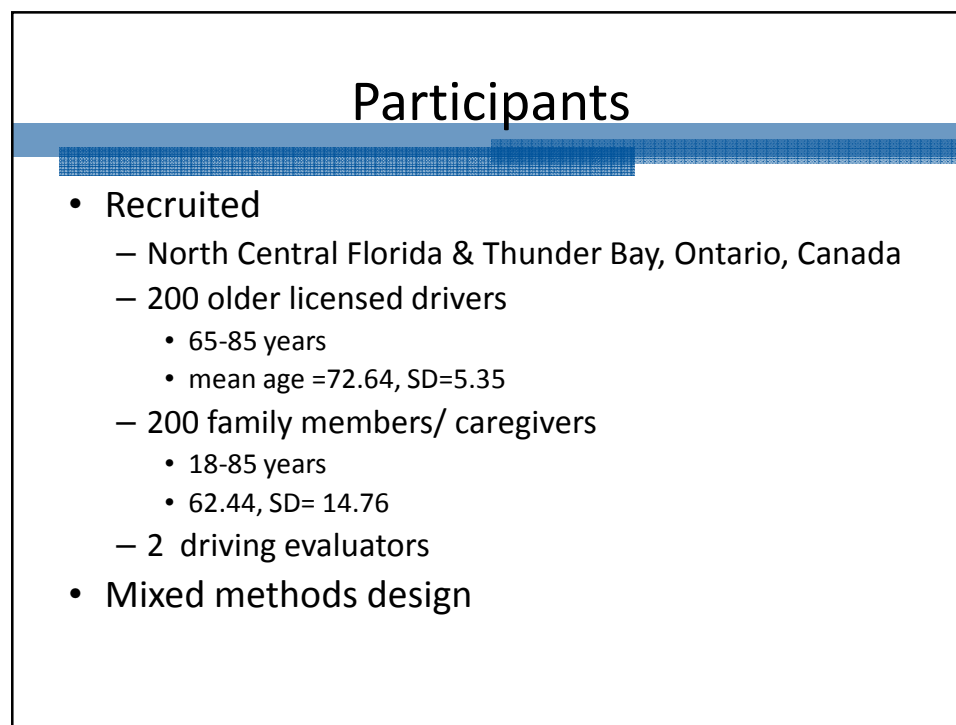
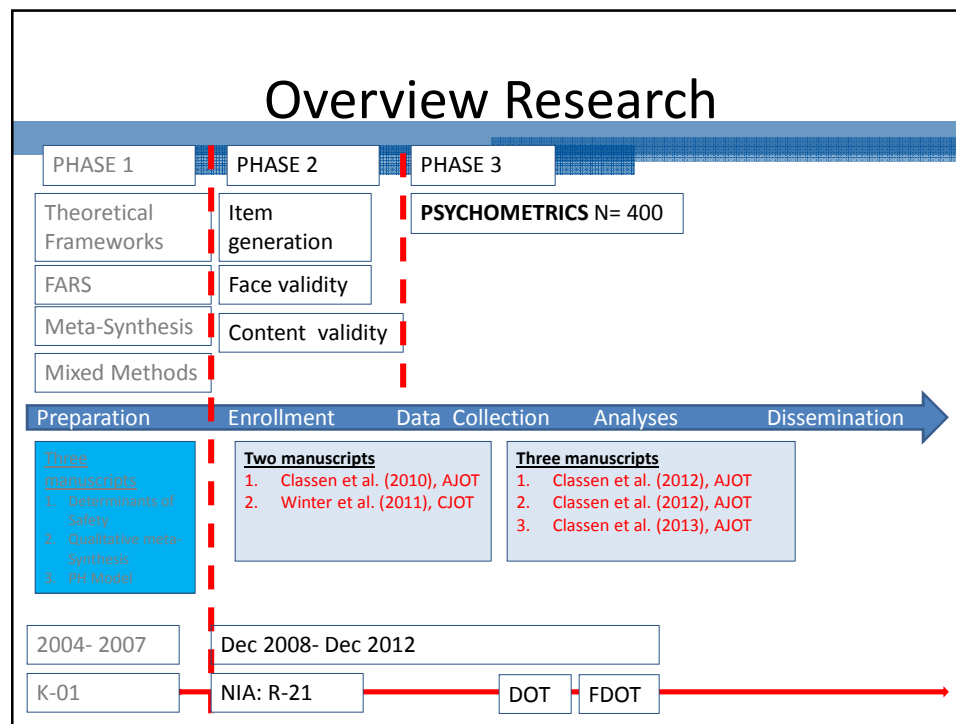
P_{ni} = probability of person n passing item i

$1 - P_{ni}$ = probability of person n failing item i

B_n = ability of person n,

D_i = difficulty of item i

6



Procedure

Drivers

- Informed consent
- FTDS measure
- Standardized clinical battery
- Standardized on-road test
 - Protocol standardized across sites
 - IRR driving evaluators = 100%

Caregivers/ Family Members

- Informed consent
- FTDS measure



Table 1. Demographics and Driving Characteristics of Older Drivers and their F/C

	Older driver (N = 200)	Family members/caregivers (N = 200)
Age mean (SD) year	72.64 (5.35)	62.44 (14.76)
Age range year	65-85	18-85
Gender: Male	110 (55.0%)	55 (27.5%)
Race		
Caucasian	177 (88.5%)	180 (90.0%)
African-American	12 (6%)	12 (6.0%)
Others	11 (5.5%)	8 (4%)
Education		
College or university	114 (57.0%)	93 (46.5%)
Vocational /Associate	43 (21.5%)	75 (37.5%)
Degree	43 (21.5%)	32 (16.0%)
≤ High school		
Drive 7 days/week	102 (51.0%)	27 (13.5%) ^a
Licensed driver	200 (100%)	197 (98.5%)
Living alone	52 (26.0%)	25 (12.5%)
Living with partner/spouse	129 (64.5%)	111 (55.5%) ^b
MMSE mean (SD)	27.99 (1.84)	NA
Self reported number of medications used	6.73 (4.45)	NA

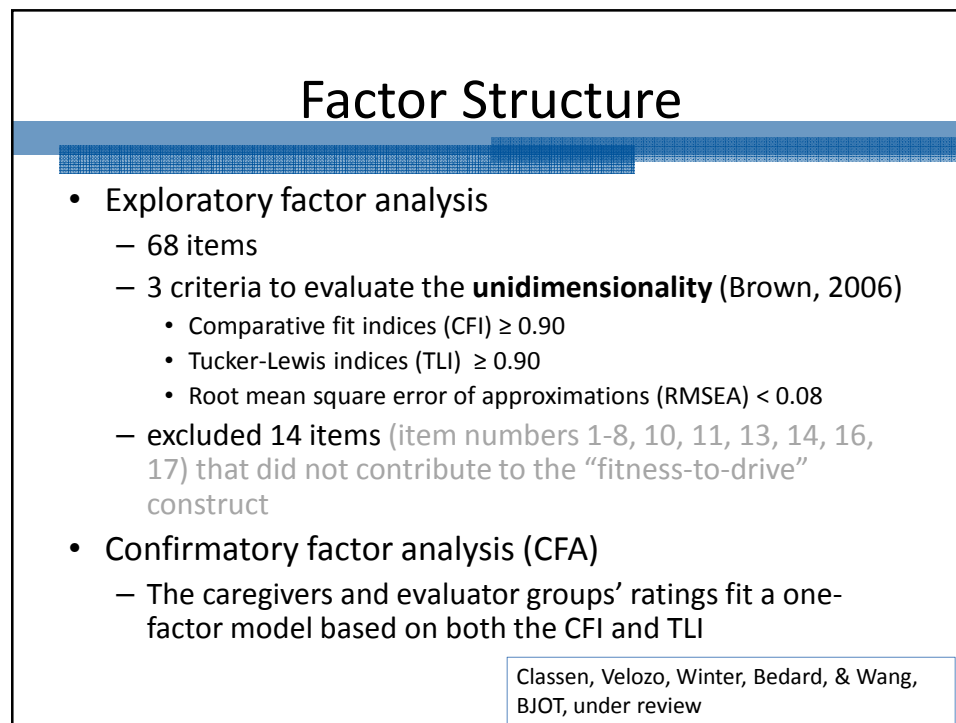
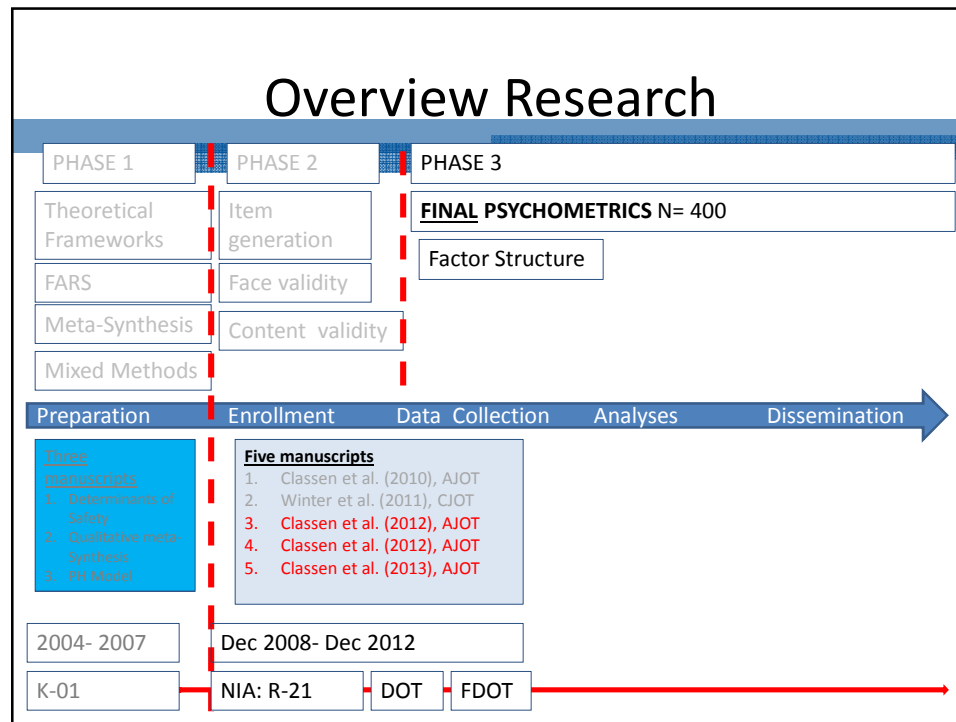
Note: MMSE = Mini Mental State Examination; NA= Not applicable; SD = standard deviation

Median of age for F/C = 67.0;

^a: Ride with the driver 7 days per week.

^b: The relationship with the driver is spouse or partner.

Classen, Velozo, Winter, Bedard, & Wang, BJOT, under review



Overview Research

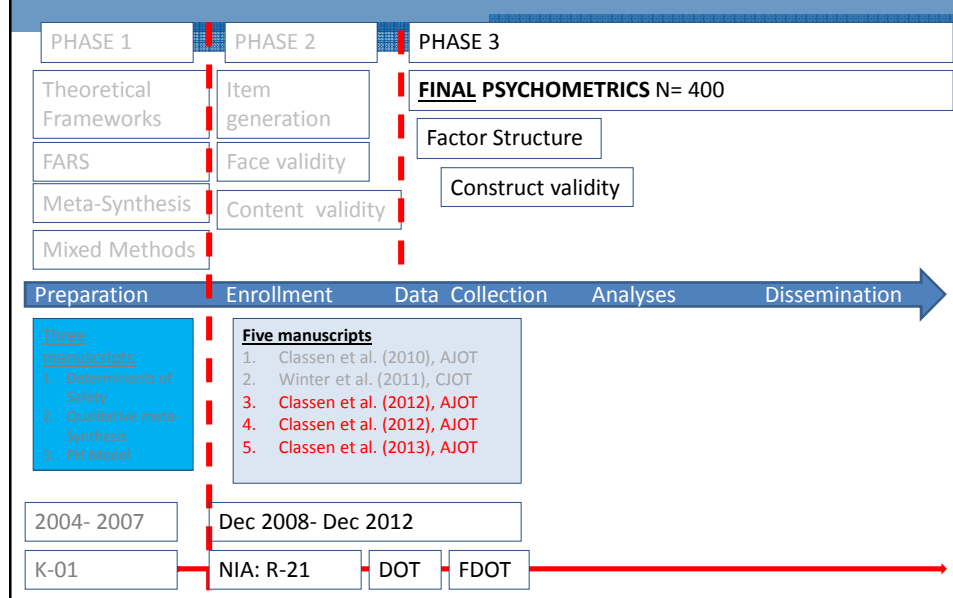


Table 3. Rasch Analysis Summary 54-item FTDS for the Driver, F/C, and Evaluator

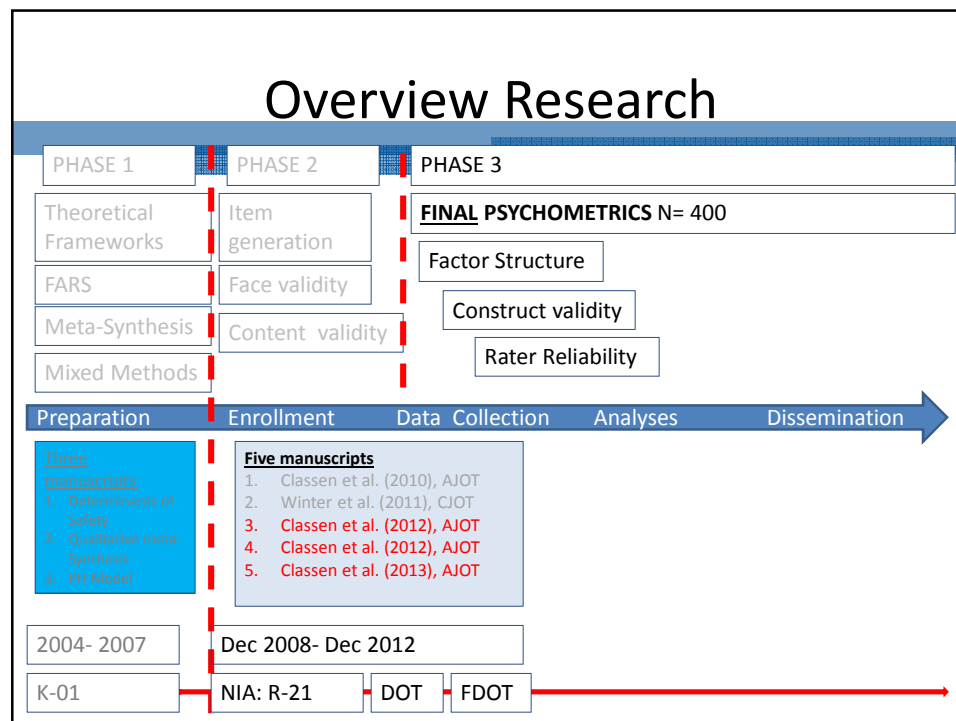
	Driver	Family member/caregiver	Evaluator
Item Misfitting	1 (1.85%)		5 (9.26%)
Item with minimum estimate value	0		0
Item Reliability		0.97	0.99
Item Separation		5.43	8.45
Person Measure	8 (4%)	9 (4.5%)	13 (6.5%)
Person Reliability	0.92	0.90	0.96
Person Separation	3.43	3.07	4.68
Person Strata	4.91	4.43	6.57

The FTDS is an accurate and efficient tool to classify older drivers into four different ability levels.

Ceiling/Floor 13 (6.5%) / 0 28 (14%) / 0 0 / 0

Note: Misfit criterion: INFIT MNSQ > 1.7 & INFIT Z-Score >2 || INFIT MNSQ < 0.5 & INFIT Z-Score <-2; Strata = (4*Sep.+1)/ 3

Classen, Velozo, Winter, Bedard, & Wang, BJOT, under review

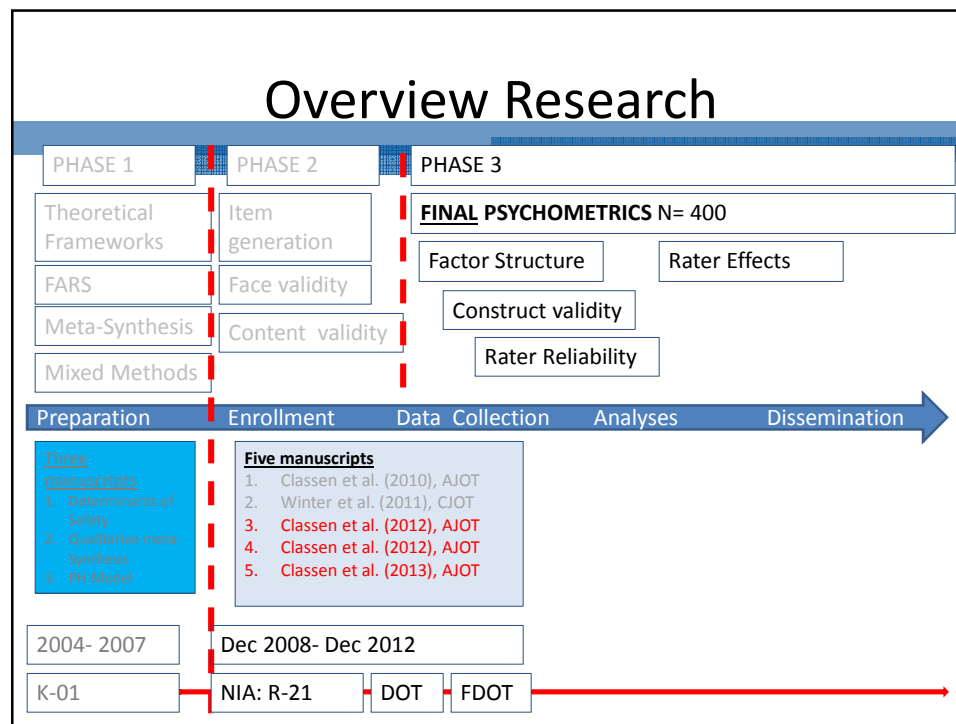


Rater Reliability

Results

- Rater reliability (33 items)
 - Overall ICC = 0.253 ($p < 0.001$) for three rater groups
 - Paired comparisons
 - CC = 0.14 ($p = 0.023$) Drivers and Caregivers
 - CC = 0.17 ($p = 0.008$) Drivers and Evaluators
 - CC = 0.40 ($p < 0.001$) Caregivers and Evaluators

Classen, Velozo, Winter, Bedard, &Wang ,
BJOT, under review

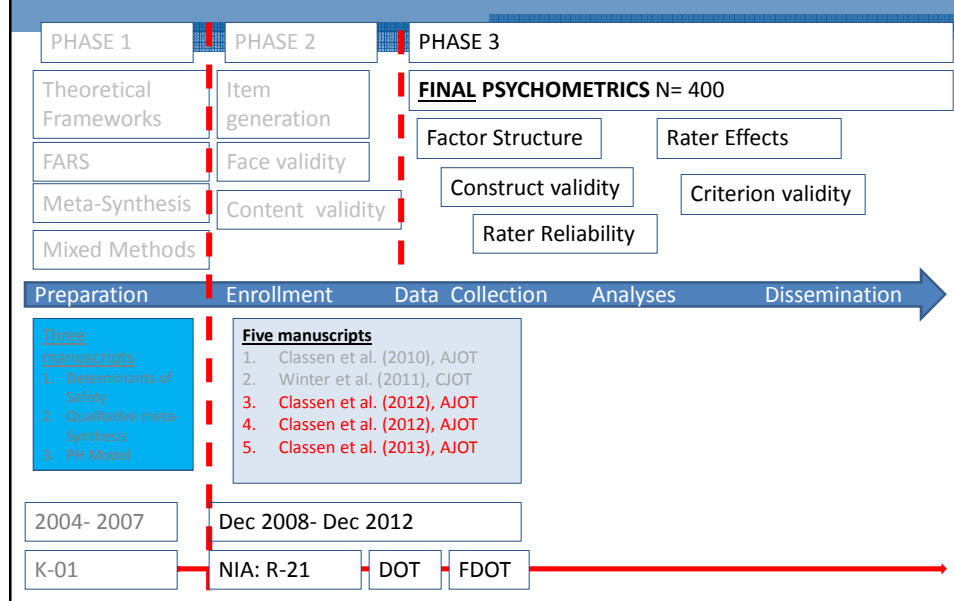


Rater Effects

- **Results (33 items)**
 - *The facets ruler*
 - No erratic rater groups; E most severe; no sig ceiling effects
 - *Fit statistics*
 - infit MnSq and outfit MnSq for both rater groups were between 0.93 and 1.15, well within the defined criteria of 0.6 and 1.4 (Bond & Fox, 2001)
 - *Fixed Chi-Square*
 - 586.1 df=2, $p < 0.001$ **showed overall rater effects**
 - **E more severe rater than C** ($t=2.33$, $p=0.02$)
 - *Paired comparisons* showed significant rater effects on 19 items
 - **E were more severe than C on 10/19 items**
 - C were more severe 9/19 items

Classen, Velozo, Winter, Bedard, & Wang ,
BJOT, under review

Overview Research



Criterion Validity

		On-road test	
		Failing	Passing
Screening test	Failing	(a) True positive	(b) False positive
	Passing	(c) False negative	(d) True Negative

$\text{Sensitivity} = a / (a + c)$
 $\text{Specificity} = d / (b + d)$
 $\text{Error} = (1 - \text{sensitivity}) + (1 - \text{specificity})$
 $\text{PPV} = a / (a + b)$
 $\text{NPV} = d / (c + d)$
 $\text{AUC} = \text{index discriminability}$

Classen, Velozo, Winter, Bedard, & Wang,
 BJOT, under review

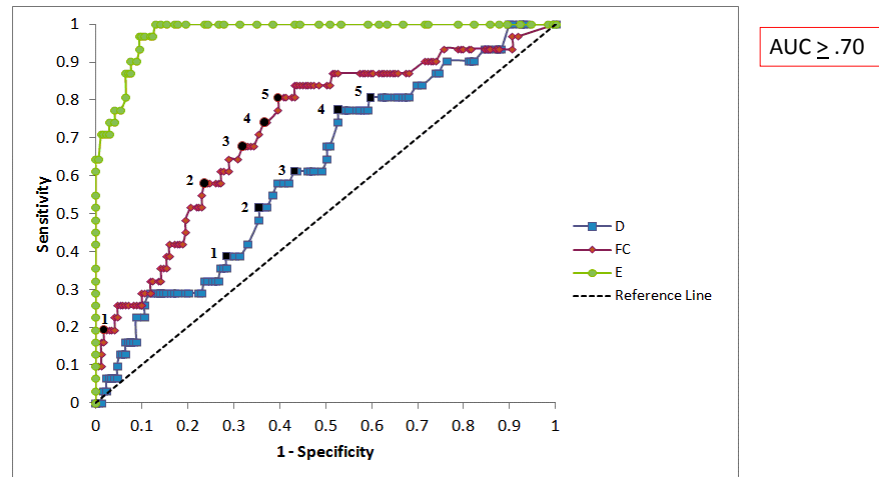


Figure 8. Receiver Operating Characteristic Curves for Three Rater Groups

Area under the Curve for Three Rater Groups

	Area	Standard Error	p-value	95% Confidence Interval	
Driver	0.617	0.053	0.039	0.513	0.720
F/C	0.726	0.050	>0.001	0.628	0.825
Evaluator	0.978	0.008	>0.001	0.962	0.995

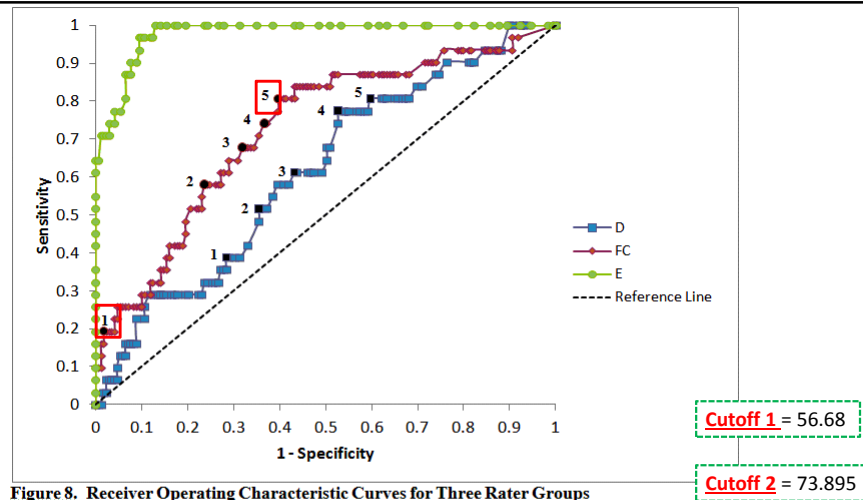
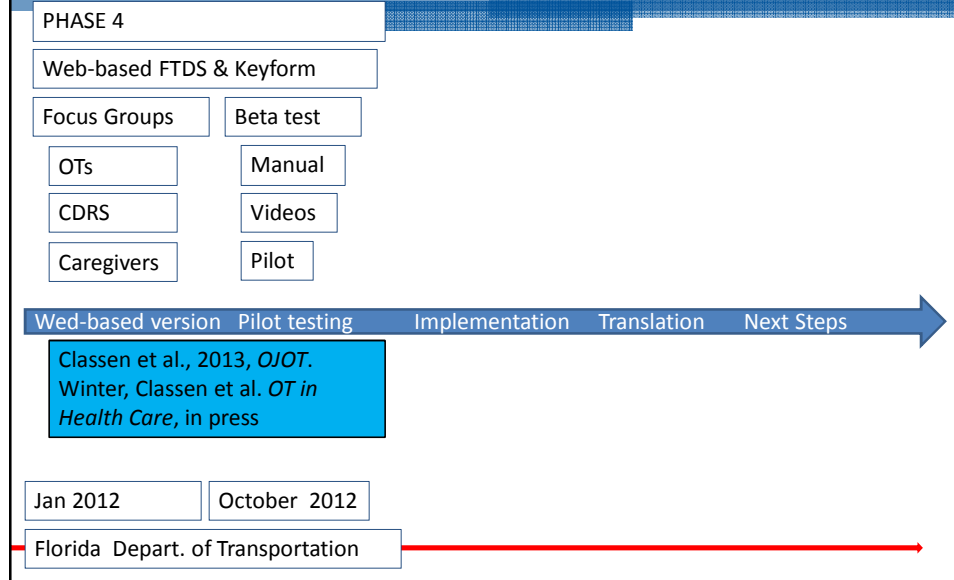


Figure 8. Receiver Operating Characteristic Curves for Three Rater Groups

Table 7. Sensitivity, Specificity, PPV, NPV and error based on F/C Ratings

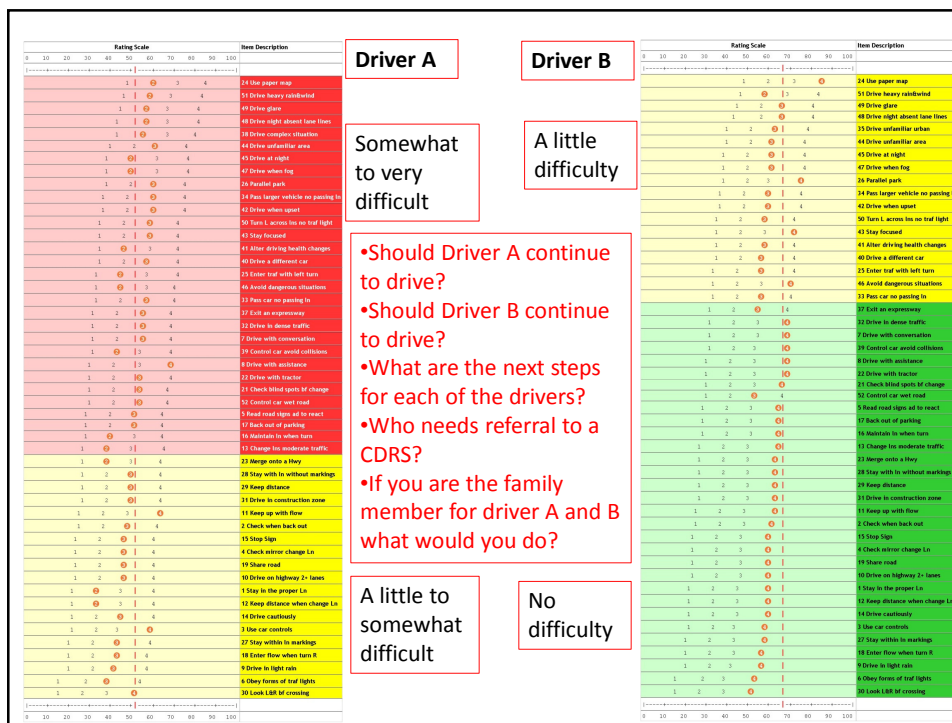
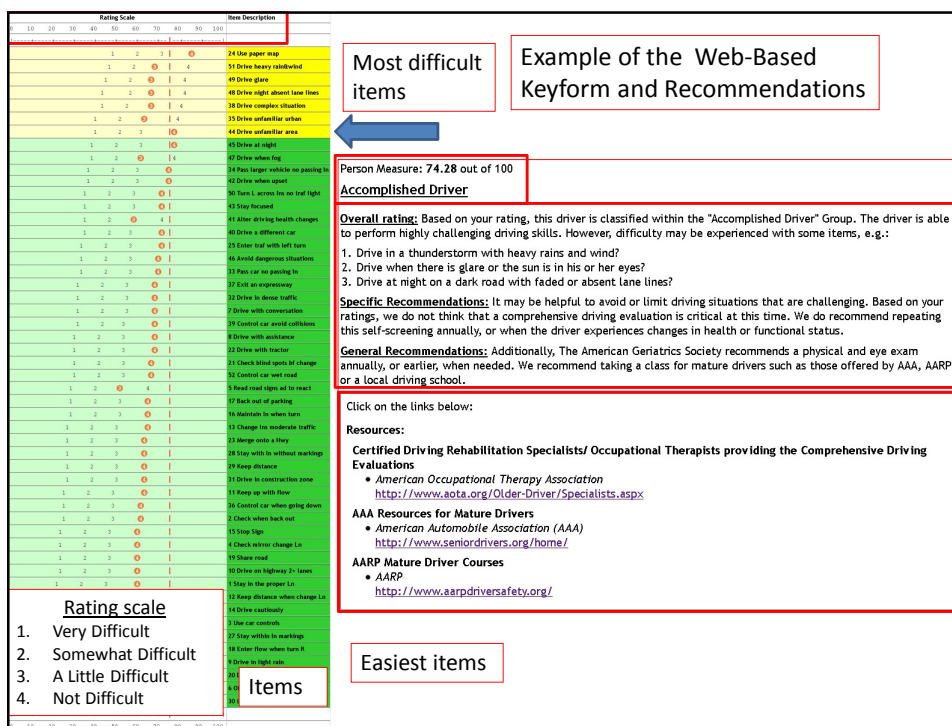
Cutoff	1=52.630	2=68.795	3=70.795	4=71.915	5=73.465
Sensitivity	0.194	0.581	0.677	0.742	0.806
Specificity	0.982	0.763	0.680	0.633	0.604
PPV	0.667	0.310	0.280	0.271	0.272
NPV	0.869	0.908	0.920	0.930	0.944
Error	0.824	0.656	0.642	0.625	0.590
False Positive	3	40	54	62	67
False Negative	25	13	10	8	6
Total Misclassification	28	53	64	70	73

Overview Research



Keyforms & Recommendations

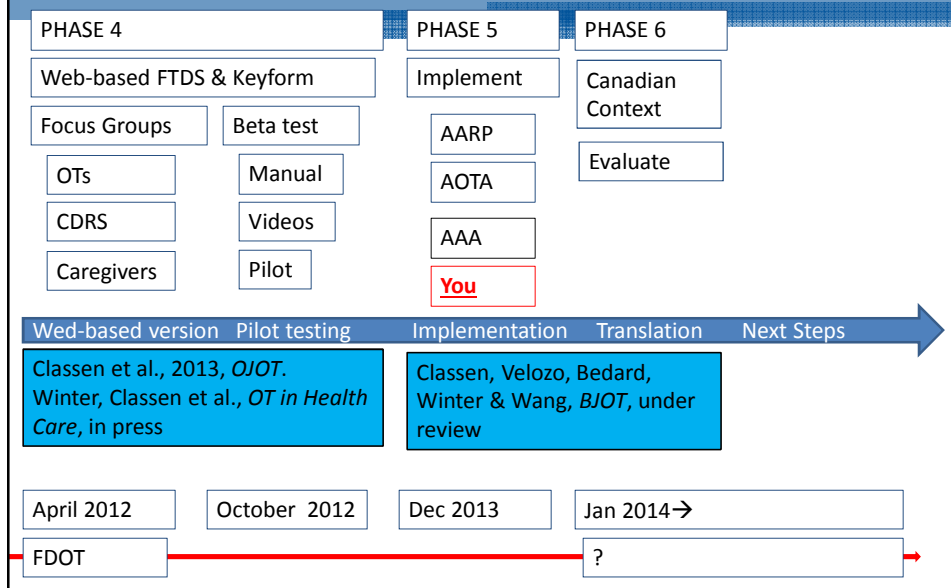
- Results summary
 - Classifies driver
 - Provide recommendations
- Keyforms helps one to observe
 - What a person can do with/without difficulty
 - What a person cannot do
 - “Transition zone”
 - Where a person moves from one set of ratings to another
- Recommendations



Case studies

- Jesus
- Mr. Patel
- Elizabeth

Overview Research



FTDS References

- 1) Classen, S., Winter, S.M., Velozo, C., Bédard, M., Lanford, D.N., & Brumback, B., Lutz, B. (2010). Item Development and Validity Testing for a Safe Driving Behavior Measure. *American Journal of Occupational Therapy*, 64 (2), 296-305.
- 2) Winter, S.M., Classen, S., Bédard, M., Lutz, B., Velozo, C. A., Lanford, D. N., & Brumback, B. (2011). Focus Group Findings for a Self-report Safe Driving Behavior Measure. *Canadian Journal of Occupational Therapy*, 78(2), 72-79.
- 3) Classen, S., Wen, P., Velozo, C., Bédard, M., Brumback, B., Winter, S.M., & Lanford, D.N. (2012). Rater Reliability and Rater Effects of the Safe Driving Behavior Measure. *American Journal of Occupational Therapy*, 16, 69-77.
- 4) Classen, S., Wen, P., Velozo, C., Bédard, M., Brumback, B., Winter, S.M., & Lanford, D.N. (2012). Psychometrics of the Self-Report Safe Driving Behavior Measure for Older Adults. *American Journal of Occupational Therapy*, 66(2), 233-241.
- 5) Classen, S., Wang, Y., Velozo, C., Bédard, M., Winter, S.M., & Lanford, D.N. (2013). Concurrent Criterion Validity of the Safe Driving Behavior Measure: A Predictor of On-Road Driving Outcomes. *American Journal of Occupational Therapy*, 67(1), 108-116.
- 6) Classen, S., Winter, S. M., Velozo, C., Hannold, E. M., and Rogers, J. (2013) Stakeholder Recommendations to Refine the Fitness-to-Drive Screening Measure *The Open Journal of Occupational Therapy*: Vol. 1: Iss. 4, Article 3.
Available at: <http://scholarworks.wmich.edu/ojot/vol1/iss4/3>

Visit web-site

On-line FTDS

<http://fitnesstodrive.php.ufl.edu/>

Contact Information

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Fitness-to-Drive Screening Measure Online

FTDS Version III
3/25/2013

A.1 Demographics of Rater

Instructions:

1. Please answer all questions to the best of your ability.
2. In this section we are asking questions about you, the family member, friend or caregiver who is rating the driver.
3. Answer by checking the box or filling in the blank.
4. Do not use the back button of the browser, it will not return you to the previous set of questions.

1. What is your birth year? _____

2. What is your gender?

- ☐ Male
- ☐ Female

3. What is your ethnicity? Do you consider yourself to be: (choose one)

Note: We are using these classifications as defined by the National Institutes of Health (NIH).

- ☐ **Hispanic or Latino** (A person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin, regardless of race)
- ☐ **Not Hispanic or Latino**

4. What is your race? Would you say you are: (choose one)

Note: We are using these classifications as defined by the National Institutes of Health (NIH).

- ☐ **American Indian / Alaska Native / First Nations / Aboriginal or Inuit:** having origins in any of the original peoples of North, Central, or South America, and who maintains tribal affiliation or community attachment.
- ☐ **Asian:** having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam.
- ☐ **Black or African American:** having origins in any of the black racial groups of Africa.
- ☐ **Native Hawaiian or Other Pacific Islander:** having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands.
- ☐ **White:** having origins in any of the original peoples of Europe, the Middle East, or North Africa.
- ☐ Other: please specify _____

5. What is your highest level of education?

- ☐ Did not go to school
- ☐ Completed Grade school (5th grade)
- ☐ Completed Middle school (8th grade)
- ☐ Completed High School/G.E.D. (12th grade)
- ☐ Completed Vocational Training
- ☐ Some College after High School Graduation
- ☐ Associate Degree
- ☐ Bachelor's Degree
- ☐ Some Professional School after College Graduation
- ☐ Master's Degree
- ☐ Doctoral Degree

6. Do you have a driver's license? (choose one)

- ☐ No
- ☐ Yes

7. How many days a week do you typically drive? (choose one)

- ☐ Less than 1
- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7

8. Do you live alone? (If "Yes" – Go to question # 10) (choose one)

- ☐ No
- ☐ Yes
- ☐ Mostly (for part of the year)

9. Who lives with you?

- ☐ Spouse or partner
- ☐ Child
- ☐ Family/Other relative
- ☐ Friend(s)
- ☐ Paid caregiver
- ☐ Other: please specify _____

10. What is your relationship with the driver you are rating? (choose one)
- ☐ Spouse or partner
 - ☐ Child
 - ☐ Family/Other relative
 - ☐ Friend(s)
 - ☐ Paid caregiver
 - ☐ Other: please specify _____
11. Besides you, how many other licensed drivers are in your household? _____
12. Do you rely on the driver for any of the following trips or activities?
(Choose all that apply)
- ☐ Shopping
 - ☐ Grocery store
 - ☐ Social activities
 - ☐ See friends or family
 - ☐ Church
 - ☐ See doctor or get medical care
 - ☐ Work related activities
 - ☐ Do not rely
 - ☐ Other: please specify _____
13. How many days a week do you ride with the driver you are rating? (choose one)
- ☐ Less than 1
 - ☐ 1
 - ☐ 2
 - ☐ 3
 - ☐ 4
 - ☐ 5
 - ☐ 6
 - ☐ 7
14. If the driver you are rating reduced or stopped driving, would it significantly impact your current lifestyle?
- ☐ No
 - ☐ Yes
15. If "Yes" to question 14, please explain: _____
- _____

Fitness-to-Drive Screening Measure Online

A.2 Demographics of Driver

Instructions:

- 1. Please answer all questions to the best of your ability.**
- 2. In this section, we are asking questions about the driver you are rating.**
- 3. Answer by checking the box or filling in the blank.**
- 4. Do not use the back button of the browser, it will not return you to the previous set of questions.**

1. What is the driver's birth year? _____

2. What is the driver's gender?

- ☐ Male
- ☐ Female

3. What is the driver's ethnicity? Do you consider the driver to be: (choose one)

Note: We are using these classifications as defined by the National Institutes of Health (NIH).

- ☐ **Hispanic or Latino** (A person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin, regardless of race)
- ☐ **Not Hispanic or Latino**

4. What is the driver's race? (choose one)

Note: We are using these classifications as defined by the National Institutes of Health (NIH).

- ☐ **American Indian / Alaska Native / First Nations / Aboriginal or Inuit:** having origins in any of the original peoples of North, Central, or South America, and who maintains tribal affiliation or community attachment.
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- ☐ **White:** having origins in any of the original peoples of Europe, the Middle East, or North Africa.
- ☐ Other: please specify _____

5. Does the driver live alone? (If "Yes" – Go to question #8) (choose one)

- ☐ No
- ☐ Yes
- ☐ Mostly (for part of the year)

6. Who lives with the driver?

- ☐ Spouse or partner
- ☐ Child
- ☐ Family/Other relative
- ☐ Friend(s)
- ☐ Paid caregiver
- ☐ Other: please specify _____

7. Besides the driver you are rating, how many other licensed drivers are in his/her household? _____

8. What is the driver's highest level of education? (choose one)

- ☐ Did not go to school
- ☐ Completed Grade school (5th grade)
- ☐ Completed Middle school (8th grade)
- ☐ Completed High School/G.E.D. (12th grade)
- ☐ Completed Vocational Training
- ☐ Some College after High School Graduation
- ☐ Associate Degree
- ☐ Bachelor's Degree
- ☐ Some Professional School after College Graduation
- ☐ Master's Degree
- ☐ Doctoral Degree

9. Does the driver use any of the following assistive devices?

(Choose all that apply)

- ☐ Corrective lenses (such as eyeglasses or contacts)
- ☐ Hearing device \ hearing aid
- ☐ Mobility device (such as cane, walker, wheelchair)
- ☐ Car devices (such as seat pad, pedal assist, spinner knob)
- ☐ Other: please specify_____

B. Driving History Profile of Driver

Instructions:

- 1. Please answer all 31 questions to the best of your ability.**
- 2. Answer by checking the box or filling in the blank.**
- 3. Do not use the back button of the browser, it will not return you to the previous set of questions.**

1. How many days a week does the driver typically drive?

- ☐ Less than 1
- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7

2. Who usually rides with the driver? (Check all that apply)

- ☐ Spouse / Partner
- ☐ Family / Other relative
- ☐ Friend(s)
- ☐ Paid caregiver
- ☐ No one
- ☐ Other: please specify_____

3. Has a health condition limited the driver's ability to drive? (choose one)

- ☐ No
- ☐ Yes

4. Has taking medications limited the driver's ability to drive (over the counter or prescribed)? (choose one)

- ☐ No
- ☐ Yes

5. Did the driver get any of the following tested in the last year? (Check all that apply)

- ☐ Vision
- ☐ Hearing
- ☐ Physical exam / checkup
- ☐ Other tests (list)_____

6. In the past year, did the driver complete, or have done, any of the following car maintenance? (choose all that apply)

- ☐ Oil change
- ☐ Checking tires
- ☐ Checking fluid levels
- ☐ Checking headlights, brake lights and parking lights

7. Does the driver avoid (when possible) any of these driving situations? (choose all that apply)

- ☐ Rush hour/heavy traffic
- ☐ Interstate/ highway driving
- ☐ Rain
- ☐ Night-time driving
- ☐ Left hand turns against traffic
- ☐ None
- ☐ Other: please specify_____

8. Has the driver been involved in a crash in the past 3 years?

(If you mark "No", go to question #10) (choose one)

- ☐ No
- ☐ Yes

9. How many crashes was the driver involved in during the past 3 years (as a driver, not passenger)?

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 or more

10. How many moving violations, citations, or traffic tickets has the driver had in the past 3 years? (If you mark "0", go to question #12) (choose one)

- ☐ 0
- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 or more

11. What moving violations, citations, or traffic tickets did the driver receive in the past three years? (Check all that apply)

- ☐ Failure to yield
- ☐ Going too slowly
- ☐ Not obeying traffic lights
- ☐ Not obeying traffic signs (such as stop sign)
- ☐ Improper passing
- ☐ Improper turning
- ☐ Careless driving
- ☐ Reckless driving
- ☐ Driving under influence of drugs or alcohol (DUI/DWI)
- ☐ Speeding
- ☐ Tailgating
- ☐ Do not know
- ☐ Other: please specify _____

12. When did the driver last attend a driver education, training or retraining course? (If you mark "Never", go to question #14) (choose one)

- ☐ Within the past year
- ☐ 1 – 3 years ago
- ☐ More than 3 years ago
- ☐ Never
- ☐ Do not know

13. If they attended a driver education class, training, or re-training, what type was it? (choose all that apply)

- ☐ On-line class
- ☐ Classroom course for all drivers
- ☐ Classroom course for mature drivers
- ☐ Course with classroom and behind the wheel instruction
- ☐ Do not know
- ☐ Other: please specify _____

14. How does the driver keep up with changes in road rules or laws? (choose all that apply)

- ☐ Driving class
- ☐ Newspaper
- ☐ TV
- ☐ Driver's handbook
- ☐ Friends or family
- ☐ Computer
- ☐ Police or law enforcement
- ☐ Driver's license office (DMV)
- ☐ None of the above

- ☐ Do not know
- ☐ Other: please specify_____

15. Does the driver have difficulty opening the car door? (choose one)

- ☐ No
- ☐ Yes

16. Does the driver have difficulty getting into his or her car? (choose one)

- ☐ No
- ☐ Yes

17. Is it difficult for the driver to adjust the car mirrors appropriately? (choose one)

- ☐ No
- ☐ Yes

18. Does the driver have difficulty adjusting the driver's seat so he or she can see above the steering wheel? (choose one)

- ☐ No
- ☐ Yes

19. Is the driver able to reach the gas pedal (accelerator) and brake pedal? (choose one)

- ☐ No
- ☐ Yes

20. Does the driver remember to turn on the headlights before driving in the dark? (choose one)

- ☐ No
- ☐ Yes

21. Does the driver use their seatbelt? (choose one)

- ☐ Always
- ☐ Often
- ☐ Sometimes
- ☐ Rarely
- ☐ Never

22. Can the driver press the gas pedal or the brake pedal when intended? (choose one)

- ☐ No
- ☐ Yes

23. Is it difficult for the driver to drive during daylight hours? (choose one)

- ☐ No
- ☐ Yes

24. Does the driver place the car in the correct gear (such as drive or reverse)? (choose one)

- ☐ No
- ☐ Yes

25. Does the driver have any difficulty turning the steering wheel? (choose one)

- ☐ No

☐ Yes

26. Does the driver stop for pedestrians crossing the street? (choose one)

☐ No

☐ Yes

27. Is it difficult for the driver to drive in good weather? (choose one)

☐ No

☐ Yes

28. As the driver on a long trip, how frequently would the driver take breaks?
(choose one)

☐ Every 1 to 2 hours

☐ Every 3 to 4 hours

☐ Every 5 to 6 hours

☐ Rarely or Never

29. Does the driver have trouble staying awake while driving? (choose one)

☐ No

☐ Yes

30. Does the driver use alternative transportation (such as taking a bus or taxi)?
(choose one)

☐ Always

☐ Often

☐ Sometimes

☐ Rarely

☐ Never

31. Do you think the driver would consider alternative transportation if it were available?
(choose one)

☐ No

☐ Yes

Fitness-to-Drive Screening Measure Online

C: Fitness-to-Drive Screening Measure

Instructions:

1. Please answer all 54 questions to the best of your ability.
2. From your observations of the driver over the **past three months**, rate the amount of difficulty for each skill. If you have not observed the driver for a skill, use your best judgment to rate the difficulty the driver would have using one of the following answers:

Very Difficult - doing it is a major challenge

Somewhat Difficult – doing it is a moderate challenge

A Little Difficult- doing it is a minor challenge

Not Difficult- can do it with ease

3. For each question, please select your answer by clicking on the text or circle.
4. Do not use the back button of the browser, it will not return you to the previous set of questions.

Note the example below:

FOR THE PERSON YOU ARE RATING, BASED ON THE LAST 3 MONTHS, HOW DIFFICULT IS IT FOR HIM OR HER TO...

A. Start the car?

- ☐ **Very Difficult**
- ☐ **Somewhat Difficult**
- ☐ **A Little Difficult**
- ☐ **Not Difficult**

FOR THE PERSON YOU ARE RATING, BASED ON THE LAST 3 MONTHS, HOW DIFFICULT IS IT FOR HIM OR HER TO...

1. Stay in the proper lane? (choose one)
 - ☐ Very Difficult
 - ☐ Somewhat Difficult
 - ☐ A Little Difficult
 - ☐ Not Difficult
2. Check for a clear path when backing out from a driveway or parking space? (choose one)
 - ☐ Very Difficult
 - ☐ Somewhat Difficult
 - ☐ A Little Difficult
 - ☐ Not Difficult
3. Use the car controls (such as the turn signals, windshield wipers, emergency brake, or headlights)? (choose one)
 - ☐ Very Difficult
 - ☐ Somewhat Difficult
 - ☐ A Little Difficult
 - ☐ Not Difficult
4. Check car mirrors when changing lanes? (choose one)
 - ☐ Very Difficult
 - ☐ Somewhat Difficult
 - ☐ A Little Difficult
 - ☐ Not Difficult
5. Read road signs far enough in advance to react (such as make a turn)? (choose one)
 - ☐ Very Difficult
 - ☐ Somewhat Difficult
 - ☐ A Little Difficult
 - ☐ Not Difficult

6. Obey varied forms of traffic lights (such as green arrow for turn lane or flashing lights)? (choose one)
- ☐ Very Difficult
 - ☐ Somewhat Difficult
 - ☐ A Little Difficult
 - ☐ Not Difficult
7. Drive and hold a conversation with one or more passengers? (choose one)
- ☐ Very Difficult
 - ☐ Somewhat Difficult
 - ☐ A Little Difficult
 - ☐ Not Difficult
8. Drive with a passenger who is providing driving directions or assistance? (choose one)
- ☐ Very Difficult
 - ☐ Somewhat Difficult
 - ☐ A Little Difficult
 - ☐ Not Difficult
9. Drive in light rain? (choose one)
- ☐ Very Difficult
 - ☐ Somewhat Difficult
 - ☐ A Little Difficult
 - ☐ Not Difficult
10. Drive on a highway with two or more lanes in each direction? (choose one)
- ☐ Very Difficult
 - ☐ Somewhat Difficult
 - ☐ A Little Difficult
 - ☐ Not Difficult
11. Keep up with the flow of traffic? (choose one)
- ☐ Very Difficult
 - ☐ Somewhat Difficult
 - ☐ A Little Difficult
 - ☐ Not Difficult

12. Keep distance from other vehicles when changing lanes? (choose one)

- ☐ Very Difficult
- ☐ Somewhat Difficult
- ☐ A Little Difficult
- ☐ Not Difficult

13. Change lanes in moderate traffic? (choose one)

- ☐ Very Difficult
- ☐ Somewhat Difficult
- ☐ A Little Difficult
- ☐ Not Difficult

14. Drive cautiously (to avoid collisions) in situations when others are driving erratically (such as speeding, road rage, crossing lane lines or driving distracted)? (choose one)

- ☐ Very Difficult
- ☐ Somewhat Difficult
- ☐ A Little Difficult
- ☐ Not Difficult

15. Brake at a stop sign so car stops completely before the marked line? (choose one)

- ☐ Very Difficult
- ☐ Somewhat Difficult
- ☐ A Little Difficult
- ☐ Not Difficult

16. Maintain lane when turning (not cut corner or go wide)? (choose one)

- ☐ Very Difficult
- ☐ Somewhat Difficult
- ☐ A Little Difficult
- ☐ Not Difficult

17. Back out of parking spots? (choose one)

- ☐ Very Difficult
- ☐ Somewhat Difficult
- ☐ A Little Difficult
- ☐ Not Difficult

18. Enter the flow of traffic when turning right? (choose one)

- ☐ Very Difficult
- ☐ Somewhat Difficult
- ☐ A Little Difficult
- ☐ Not Difficult

19. Share the road with vulnerable road users such as bicyclists, scooter drivers, motorcyclists? (choose one)

- ☐ Very Difficult
- ☐ Somewhat Difficult
- ☐ A Little Difficult
- ☐ Not Difficult

20. Drive on graded (unpaved) road? (choose one)

- ☐ Very Difficult
- ☐ Somewhat Difficult
- ☐ A Little Difficult
- ☐ Not Difficult

21. Check blind spots before changing lanes? (choose one)

- ☐ Very Difficult
- ☐ Somewhat Difficult
- ☐ A Little Difficult
- ☐ Not Difficult

22. Drive with surrounding tractor trailers (transport trucks)? (choose one)

- ☐ Very Difficult
- ☐ Somewhat Difficult
- ☐ A Little Difficult
- ☐ Not Difficult

23. Merge onto a highway? (choose one)

- ☐ Very Difficult
- ☐ Somewhat Difficult
- ☐ A Little Difficult
- ☐ Not Difficult

24. Use a paper map while driving? (choose one)
- ☐ Very Difficult
 - ☐ Somewhat Difficult
 - ☐ A Little Difficult
 - ☐ Not Difficult
25. Make a left hand turn crossing multiple lanes and entering traffic (with no lights or stop signs)? (choose one)
- ☐ Very Difficult
 - ☐ Somewhat Difficult
 - ☐ A Little Difficult
 - ☐ Not Difficult
26. Parallel park? (choose one)
- ☐ Very Difficult
 - ☐ Somewhat Difficult
 - ☐ A Little Difficult
 - ☐ Not Difficult
27. Stay within the lane markings unless making a lane change? (choose one)
- ☐ Very Difficult
 - ☐ Somewhat Difficult
 - ☐ A Little Difficult
 - ☐ Not Difficult
28. Stay within proper lane in the absence of road features such as clearly marked lane lines, reflectors or rumble strips? (choose one)
- ☐ Very Difficult
 - ☐ Somewhat Difficult
 - ☐ A Little Difficult
 - ☐ Not Difficult
29. Keep distance between his or her car and others (allow time to react to hazards)? (choose one)
- ☐ Very Difficult
 - ☐ Somewhat Difficult
 - ☐ A Little Difficult
 - ☐ Not Difficult

30. Look left and right before crossing an intersection? (choose one)

- ☐ Very Difficult
- ☐ Somewhat Difficult
- ☐ A Little Difficult
- ☐ Not Difficult

31. Drive in a construction zone? (choose one)

- ☐ Very Difficult
- ☐ Somewhat Difficult
- ☐ A Little Difficult
- ☐ Not Difficult

32. Drive in dense traffic (such as rush hour)? (choose one)

- ☐ Very Difficult
- ☐ Somewhat Difficult
- ☐ A Little Difficult
- ☐ Not Difficult

33. Pass (overtake) a car in the absence of a passing lane? (choose one)

- ☐ Very Difficult
- ☐ Somewhat Difficult
- ☐ A Little Difficult
- ☐ Not Difficult

34. Pass (overtake) a larger vehicle such as a RV, tractor-trailer (transport truck), or dump truck in the absence of a passing lane? (choose one)

- ☐ Very Difficult
- ☐ Somewhat Difficult
- ☐ A Little Difficult
- ☐ Not Difficult

35. Drive in an unfamiliar urban area? (choose one)

- ☐ Very Difficult
- ☐ Somewhat Difficult
- ☐ A Little Difficult
- ☐ Not Difficult

36. Control his or her car when going down a steep hill? (choose one)
- ☐ Very Difficult
 - ☐ Somewhat Difficult
 - ☐ A Little Difficult
 - ☐ Not Difficult
37. Exit an expressway, or inter-state from a left-hand lane? (choose one)
- ☐ Very Difficult
 - ☐ Somewhat Difficult
 - ☐ A Little Difficult
 - ☐ Not Difficult
38. Drive in a highly complex situation (such as a large city with high-speed traffic, multiple highway interchanges and several signs)? (choose one)
- ☐ Very Difficult
 - ☐ Somewhat Difficult
 - ☐ A Little Difficult
 - ☐ Not Difficult
39. Control the car (brake hard or swerve) to avoid collisions? (choose one)
- ☐ Very Difficult
 - ☐ Somewhat Difficult
 - ☐ A Little Difficult
 - ☐ Not Difficult
40. Drive a different car (such as another person's car or a rental car)? (choose one)
- ☐ Very Difficult
 - ☐ Somewhat Difficult
 - ☐ A Little Difficult
 - ☐ Not Difficult
41. Alter his or her driving in response to changes in health (such as vision, reaction time, fatigue, thinking, joint stiffness, medications)? (choose one)
- ☐ Very Difficult
 - ☐ Somewhat Difficult
 - ☐ A Little Difficult
 - ☐ Not Difficult

42. Drive when upset (anxious, worried, sad or angry)? (choose one)
- ☐ Very Difficult
 - ☐ Somewhat Difficult
 - ☐ A Little Difficult
 - ☐ Not Difficult
43. Stay focused on driving when there are distractions (such as radio, eating, drinking, pet in the car)? (choose one)
- ☐ Very Difficult
 - ☐ Somewhat Difficult
 - ☐ A Little Difficult
 - ☐ Not Difficult
44. Drive in an unfamiliar area? (choose one)
- ☐ Very Difficult
 - ☐ Somewhat Difficult
 - ☐ A Little Difficult
 - ☐ Not Difficult
45. Drive at night? (choose one)
- ☐ Very Difficult
 - ☐ Somewhat Difficult
 - ☐ A Little Difficult
 - ☐ Not Difficult
46. Avoid dangerous situations (such as car door opening, car pulling out, road debris, or an animal darting in front of car)? (choose one)
- ☐ Very Difficult
 - ☐ Somewhat Difficult
 - ☐ A Little Difficult
 - ☐ Not Difficult
47. Drive when there is fog? (choose one)
- ☐ Very Difficult
 - ☐ Somewhat Difficult
 - ☐ A Little Difficult
 - ☐ Not Difficult

48. Drive at night on a dark road with faded or absent lane lines? (choose one)

- ☐ Very Difficult
- ☐ Somewhat Difficult
- ☐ A Little Difficult
- ☐ Not Difficult

49. Drive when there is glare or the sun is in his or her eyes? (choose one)

- ☐ Very Difficult
- ☐ Somewhat Difficult
- ☐ A Little Difficult
- ☐ Not Difficult

50. Turn left across multiple lanes when there is no traffic light? (choose one)

- ☐ Very Difficult
- ☐ Somewhat Difficult
- ☐ A Little Difficult
- ☐ Not Difficult

51. Drive in a thunderstorm with heavy rains and wind? (choose one)

- ☐ Very Difficult
- ☐ Somewhat Difficult
- ☐ A Little Difficult
- ☐ Not Difficult

52. Control his or her car on a wet road? (choose one)

- ☐ Very Difficult
- ☐ Somewhat Difficult
- ☐ A Little Difficult
- ☐ Not Difficult

53. Drive on a snow covered road? (choose one)

- ☐ Very Difficult
- ☐ Somewhat Difficult
- ☐ A Little Difficult
- ☐ Not Difficult

54. Drive on an icy road? (choose one)

- ☐ Very Difficult
- ☐ Somewhat Difficult
- ☐ A Little Difficult
- ☐ Not Difficult

Case Study 1: Jesus- SDBM 1098

Jesus is a 68 year old Hispanic Latino male with a diagnosis of recent angina, and comorbidities including: arthritis in hands (15 years), hemorrhage in left eye (10 years), GERD (45 years), and skin cancer (12 years). He is taking: Prilosec for GERD, Lasix, Lipitor and aspirin for angina, and Advil for arthritis. He has some college after high school and is living with his spouse who is also driving. He wears spectacles. He drives 6 days a week, drives mostly with his spouse, and he maintains his vehicle well. He is enjoying dining out, going to the matinee movies, and visiting with friends, often attending sporting events on Saturdays. He reports no driving self –restrictions, has had no crashes in the last three years, and one citation for improper passing in the past year. He has taken a classroom-based driving refresher course in the last year.

From this information, construct a list of strengths and challenges for Jesus

Strengths	Challenges

He has completed a clinical battery of tests yielding the following results:

Vision:

- Acuity 20/40 both eyes (20/50)
 - R eye 20/20
 - Left eye 20/40
- Contrast sensitivity intact
- Peripheral fields intact
- Depth perception = 3/9, impaired (cut-off = 5/9)
- Color discrimination intact
- Lateral/vertical phorias intact

Cognition:

- MMSE 25/30 [orientation to place; recall 1/3; attention and calculation 3/5] (cut-point= 26/30)
- Trails B = 85 seconds (cut-point= 180 seconds)
- UFOV = Category 1 (low risk for crashes)

- UFOV sub-test 1: 16.7 ms; sub-test 2: 40 ms; sub-test 3: 213.3 ms (cut-point= 500 ms)

Motor:

- Transfers and ambulation= independent
- Rapid pace walk= 4.34 seconds (cut-point= 7 seconds)
- ROM
 - WFL's: UEs, LEs,
 - Mild impairment: Trunk, Neck
- GMM Strength = WFL's UEs, LEs, Trunk, Neck
- Coordination
 - Finger to nose: R= 7.47 sec; L= 7.22 sec (cut-off = 10 seconds)
 - Toe tap: R= 2.92 sec; L= 2.94 sec (cut-off = 10 seconds)

Jesus' wife has completed the FTDS yielding the following results

- Measure Score = 74.28 (cut point range 55.69-72.53)
- He is classified as an accomplished driver
- Identify the difficulties based on his keyform results [3s]
- Identify the Recommendations from his keyform?

--

He has completed an on-road test with the following results:

- Does not come to complete stops
- Stops over stop lines at intersections

CDRS Recommendation

- Instruction on where to stop in reference to stop line
- Continue driving

What are your driving recommendations for Jesus? Provide a rationale

Can he continue to drive?	
Why/ why not?	

If so, with or without restrictions?	
What are the restrictions?	
If so, any follow-up sessions by the CDRS?	
Frequency & Intensity Time Type	

Use the results of the clinical tests, the on-road test, and the FTDS to develop an intervention plan for Jesus.

• Short-term goals	
• Intermediate goals	
• Long-term goals	

Articulate your discharge plan

--

Fitness-to-Drive Screening Measure Online

Recommendations

[Also see](#)[Keyform Results](#)

Select parameters, then click **Update** to view recommendations.

Items: Sessions:

Total Item Responses: 51

Outfit (mean-squared): 0.53

Outfit (Z-score): -0.82

Infit (mean-squared): 0.7

Infit (Z-score): -0.87

Person Measure: 74.28 out of 100 (*3.8 logits*)



Accomplished Driver

Overall rating: Based on your rating, this driver is classified within the "Accomplished Driver" Group. The driver is able to perform complex driving skills. However, difficulty may be experienced with some items, e.g.:

1. Drive in a thunderstorm with heavy rains and wind?
2. Drive when there is glare or the sun is in his or her eyes?
3. Drive at night on a dark road with faded or absent lane lines?

Specific Recommendations: It may be helpful to avoid or limit driving situations that are challenging. Based on your ratings, we do not think that a comprehensive driving evaluation is critical at this time. We do recommend repeating this self-screening annually, or when the driver experiences changes in health or functional status.

General Recommendations: Additionally, The American Geriatrics Society recommends a physical and eye exam annually, or earlier, when needed. We recommend taking a class for mature drivers such as those offered by AAA, AARP

or a local driving school.

For further details on driving or community mobility, click on the links below:

Resources:

AAA Resources for Mature Drivers

- *American Automobile Association (AAA)*
<http://seniordriving.aaa.com/>

AARP Driver Safety

- *AARP*
<http://www.aarp.org/drive>

Certified Driving Rehabilitation Specialists/ Occupational Therapists providing the Comprehensive Driving Evaluations

- *American Occupational Therapy Association*
http://myaota.aota.org/driver_search/
- *The Association for Driver Rehabilitation Specialists (ADED)*
<http://www.driver-ed.org/custom/directory/?pageid=209&showTitle=1>

Information and free resources to help you become more familiar with transportation resources and services available in your community.

- *National Center on Senior Transportation*
http://seniortransportation.easterseals.com/site/PageServer?pagename=NCST2_older

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Fitness-to-Drive Screening Measure Online

Keyform Results

[Also see](#)
[Recommendations](#)

Select parameters, then click **Update** to build Keyform output.

Items: Sessions:
 Clustering: Show Responses:

Total Items: 51

Outfit (mean-squared): 0.53

Outfit (Z-score): -0.82

Infit (mean-squared): 0.7

Infit (Z-score): -0.87

Person Measure: 74.28 out of 100 (3.8 logits)



Rating Scale											Item Description
0	10	20	30	40	50	60	70	80	90	100	
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----											
				1		2		3		4	24 Use paper map
			1		2		3			4	51 Drive heavy rain&wind
			1		2		3			4	49 Drive glare
			1		2		3			4	48 Drive night absent lane lines
			1		2		3			4	38 Drive complex situation
			1		2		3			4	35 Drive unfamiliar urban
			1		2		3		4		44 Drive unfamiliar area
			1		2		3		4		45 Drive at night
			1		2		3		4		47 Drive when fog

1	2	3	4	34 Pass larger vehicle no passing In
1	2	3	4	42 Drive when upset
1	2	3	4	50 Turn L across lns no traf light
1	2	3	4	43 Stay focused
1	2	3	4	41 Alter driving health changes
1	2	3	4	40 Drive a different car
1	2	3	4	25 Enter traf with left turn
1	2	3	4	46 Avoid dangerous situations
1	2	3	4	33 Pass car no passing In
1	2	3	4	37 Exit an expressway
1	2	3	4	32 Drive in dense traffic
1	2	3	4	7 Drive with conversation
1	2	3	4	39 Control car avoid collisions
1	2	3	4	8 Drive with assistance
1	2	3	4	22 Drive with tractor
1	2	3	4	21 Check blind spots bf change
1	2	3	4	52 Control car wet road
1	2	3	4	5 Read road signs ad to react
1	2	3	4	17 Back out of parking
1	2	3	4	16 Maintain In when turn
1	2	3	4	13 Change lns moderate traffic
1	2	3	4	23 Merge onto a Hwy
1	2	3	4	28 Stay with In without markings
1	2	3	4	29 Keep distance
1	2	3	4	31 Drive in construction zone

1	2	3	4		11 Keep up with flow						
1	2	3	4		36 Control car when going down						
1	2	3	4		2 Check when back out						
1	2	3	4		15 Stop Sign						
1	2	3	4		4 Check mirror change Ln						
1	2	3	4		19 Share road						
1	2	3	4		10 Drive on highway 2+ lanes						
1	2	3	4		1 Stay in the proper Ln						
1	2	3	4		12 Keep distance when change Ln						
1	2	3	4		14 Drive cautiously						
1	2	3	4		3 Use car controls						
1	2	3	4		27 Stay within Ln markings						
1	2	3	4		18 Enter flow when turn R						
1	2	3	4		9 Drive in light rain						
1	2	3	4		20 Drive on graded road						
1	2	3	4		6 Obey forms of traf lights						
1	2	3	4		30 Look L&R bf crossing						
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----											
0	10	20	30	40	50	60	70	80	90	100	

Case Study 2: Mr. Patel - Key form #1062PD

Mr. Patel is a 65 year old male from Indian descent with a diagnosis of Parkinson's disease (13 years), and comorbidities including: high blood pressure (10 years), arthritis all joints (5 years), undiagnosed right hip injury secondary to a fall one month ago, frequent urination (6 months), bilateral eye cataracts (2 years), and deep brain stimulation (1 year). He is taking: Stalevo and Synthroid for Parkinson's disease, Amlodipine for blood pressure, Aricept for secondary Parkinson's disease effects, Lexapro for mood changes secondary to Parkinson's disease, stool softer, and multivitamin. He has completed middle school and is living with his spouse, who is also driving. He wears spectacles. He drives once a month to a car show, and drives a golf cart 7 days per week. Except for going to the car show, he mainly watches TV, walks their small dog and putters in the vegetable garden. He reports avoiding rush hour traffic, has had no crashes, but scrapes and dents are visible on his car. He has not taken any classroom-based driving refresher courses.

From this information, construct a list of strengths and challenges for Mr. Patel

Strengths	Challenges

He has completed a clinical battery of tests, while in the "on state" (on medications for allowing optimal performance) yielding the following results:

Vision:

- Acuity 20/40 both eyes (20/50)
 - Right eye 20/50
 - Left eye 20/50
- Contrast sensitivity impaired
- Peripheral fields intact
- Depth perception = 5/9, borderline (cut-off = 5/9)
- Color discrimination impaired= 3/8 (cut-off = 5/8)
- Lateral/vertical phorias intact

Cognition:

- MMSE 23/30 [recall 2/3; attention and calculation 1/5; copy design 0/1; writing a sentence 0/1] (cut-point= 26/30)
- Trails B = 360 seconds (cut-point= 180 seconds)
- Useful Field of View (UFOV) = Category 5 (high risk for crashes)

- UFOV sub-test 1: 36.7 ms; sub-test 2: 36.8 ms; sub-test 3: 410.3 ms (cut-point= 500 milliseconds)

Motor:

- Transfers and ambulation= independent
- Rapid pace walk= 8.00 seconds (cut-point= 7 seconds)
- Range of Motion
 - Within Functional Limits: Upper extremities and Lower extremities
 - Severe impairment: Trunk, Neck
- Gross Manual Muscle Test Strength: Within Functional Limits for Upper extremities and Lower extremities, Trunk, and Neck
- Coordination
 - Finger to nose: Right= 7.94 seconds; Left= 7.69 seconds (cut-off = 10 seconds)
 - Toe tap: Right= 3.28 seconds; Left= 3.69 seconds (cut-off = 10 seconds)

Mrs. Patel has completed the Fitness to Drive Screening Measure (FTDS) yielding the following results

- Measure Score = 50.91 (cut point range 55.69-72.53)
- He is classified as an at-risk driver
- Identify the difficulties based on his keyform results
- Identify the Recommendations from his keyform?

--

He has completed an on-road test with the following results:

- Drifts out of lane when driving over 30 miles an hour
- Gets easily distracted
- Overcautious with gap acceptance, missing opportunities to turn
- Poor lane maintenance, vehicle position difficulties and impaired scanning through the left turns

CDRS Recommendation

- Classified as unsafe, not remediable

What are your driving recommendations for Mr. Patel? Provide a rationale

Can he continue to drive?	
Why/ why not?	
If so, with or without restrictions?	

What are the restrictions?	
If so, any follow-up sessions by the CDRS?	
Frequency & Intensity Time Type	

Use the results of the clinical tests, the on-road test, and the FTDS to develop an intervention plan for Mr. Patel.

• Short-term goals	
• Intermediate goals	
• Long-term goals	

Articulate your discharge plan

--

Questions:

--

Fitness-to-Drive Screening Measure Online

Recommendations

[Also see](#)[Keyform Results](#)

Select parameters, then click **Update** to view recommendations.

Items: Sessions:

Total Item Responses: **49**

Outfit (mean-squared): **0.8**

Outfit (Z-score): **-1.05**

Infit (mean-squared): **0.75**

Infit (Z-score): **-1.37**

Person Measure: **50.91** out of 100 (*0.36 logits*)



At-Risk Driver who has difficulty with one or more critical driving error(s)

Overall rating: Based on your rating, the driver is classified within the "At-Risk Driver" Group with one or more critical driving error(s) . Although the driver can perform some basic driving skills, the driver requires immediate attention to address the safety concerns and critical driving errors. The driving skills causing serious concerns are:

1. Make a left hand turn crossing multiple lanes and entering traffic (with no lights or stop signs)?
2. Maintain lane when turning (not cut corner or go wide)?
3. Change lanes in moderate traffic?

Specific Recommendations: We recommend the driver to see a doctor as soon as possible, and not drive until he/she undergoes a comprehensive driving evaluation conducted by a Certified Driving Rehabilitation Specialist. Information on the use and access to alternative transportation (other than the personal

automobile) may be available from the local Area Agency on Aging or contact the Eldercare Locator at 800-677-1116.

General Recommendations: Based on guidelines of The American Geriatrics Society, we recommend an eye exam annually, or earlier if there are changes in health or vision.

For further details on driving or community mobility, click on the links below:

Resources:

AAA Resources for Mature Drivers

- *American Automobile Association (AAA)*
<http://seniordriving.aaa.com/>

AARP Driver Safety

- *AARP*
<http://www.aarp.org/drive>

Certified Driving Rehabilitation Specialists/ Occupational Therapists providing the Comprehensive Driving Evaluations

- *American Occupational Therapy Association*
http://myaota.aota.org/driver_search/
- *The Association for Driver Rehabilitation Specialists (ADED)*
<http://www.driver-ed.org/custom/directory/?pageid=209&showTitle=1>

Information and free resources to help you become more familiar with transportation resources and services available in your community.

- *National Center on Senior Transportation*
http://seniortransportation.easterseals.com/site/PageServer?pagename=NCST2_older

Fitness-to-Drive Screening Measure Online

Keyform Results

[Also see](#)
[Recommendations](#)

Select parameters, then click **Update** to build Keyform output.

Items: Sessions:
 Clustering: Show Responses:

Total Items: **49**

Outfit (mean-squared): **0.8**

Outfit (Z-score)): **-1.05**

Infit (mean-squared)): **0.75**

Infit (Z-score)): **-1.37**

Person Measure: **50.91** out of 100 (*0.36 logits*)



Rating Scale											Item Description
0	10	20	30	40	50	60	70	80	90	100	
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----											
					1		2	3	4		24 Use paper map
					1		2	3	4		51 Drive heavy rain&wind
					1		2	3	4		49 Drive glare
					1		2	3	4		48 Drive night absent lane lines
					1		2	3	4		38 Drive complex situation
					1	2	3	4			44 Drive unfamiliar area
					1	2		3	4		45 Drive at night
					1	2		3	4		47 Drive when fog
					1	2		3	4		26 Parallel park

1	2		3	4	34 Pass larger vehicle no passing In
1	2		3	4	42 Drive when upset
1	2		3	4	50 Turn L across lns no traf light
1	2		3	4	43 Stay focused
1	2		3	4	41 Alter driving health changes
1	2		3	4	40 Drive a different car
1	2		3	4	25 Enter traf with left turn
1	2		3	4	46 Avoid dangerous situations
1	2		3	4	33 Pass car no passing In
1	2		3	4	37 Exit an expressway
1	2		3	4	32 Drive in dense traffic
1	2		3	4	7 Drive with conversation
1	2		3	4	39 Control car avoid collisions
1	2		3	4	8 Drive with assistance
1	2		3	4	22 Drive with tractor
1	2		3	4	21 Check blind spots bf change
1	2		3	4	52 Control car wet road
1	2		3	4	5 Read road signs ad to react
1	2		3	4	17 Back out of parking
1	2		3	4	16 Maintain In when turn
1	2		3	4	13 Change lns moderate traffic
1	2		3	4	23 Merge onto a Hwy
1	2		3	4	28 Stay with In without markings
1	2		3	4	29 Keep distance
1	2		3	4	31 Drive in construction zone

1	2	3		4	11 Keep up with flow					
1	2	3		4	2 Check when back out					
1	2	3		4	15 Stop Sign					
1	2	3		4	4 Check mirror change Ln					
1	2	3		4	19 Share road					
1	2	3		4	10 Drive on highway 2+ lanes					
1	2	3		4	1 Stay in the proper Ln					
1	2	3		4	12 Keep distance when change Ln					
1	2	3		4	14 Drive cautiously					
1	2	3		4	3 Use car controls					
1	2	3		4	27 Stay within Ln markings					
1	2	3		4	18 Enter flow when turn R					
1	2	3		4	9 Drive in light rain					
1	2	3		4	6 Obey forms of traf lights					
1	2	3	4		30 Look L&R bf crossing					
-----+-----+-----+-----+-----+ -----+-----+-----+-----+-----+										
0	10	20	30	40	50	60	70	80	90	100

Case Study 3: Elizabeth Key Form # SDBM 1040

Elizabeth is a 74 year old white female with a diagnosis of glaucoma right eye (10 years) and comorbidities including high blood pressure (40 years), arthritis in hips and lower back (10 years), cataracts in right eye (5 years), sciatica (45 years), clinical depression (2 years), sleep disorder (20 years). She is taking; eye drops for glaucoma, hydrochlorothiazide and lisinpril for blood pressure, multivitamin, and glucosamine chondroitin. She has a doctoral degree and is living alone. She wears spectacles. She drives 5 days a week, drives mostly alone, and she maintains her vehicle well. She is active in her community participating in garden club, doing her own shopping and volunteer work at the local hospital. She avoids driving in rain, rush hour traffic, night time driving, and interstate/ highway driving. She has had no crashes or citations in the past three years. She has taken a classroom-based driving refresher course, more than three years ago.

From this information, construct a list of strengths and challenges for Elizabeth

Strengths	Challenges

She has completed a clinical battery of tests yielding the following results:

Vision:

- Acuity 20/30 both eyes (20/50)
 - Right eye 20/30
 - Left eye 20/20
- Contrast sensitivity intact
- Peripheral fields intact
- Depth perception = 4/9, impaired (cut-off = 5/9)
- Color discrimination intact
- Lateral/vertical phorias intact

Cognition:

- MMSE 26/30 [Recalled one of the three items; copy design = 0] (cut-point= 26/30)
- Trails B = 150 seconds (cut-point= 180 seconds)
- Useful Field of View (UFOV) = Category 3 (moderate risk for crashes)
- UFOV sub-test 1: 80.1; sub-test 2: 156.6 ms; sub-test 3: 326.8 ms (cut-point= 500 milliseconds)

Motor:

- Transfers and ambulation= independent
- Rapid pace walk= 7.02 seconds (cut-point= 7 seconds)
- Range of Motion = Within Functional Limits: Upper extremities and Lower extremities, Trunk, and Neck
- Gross Manual Muscle Test Strength = Within Functional Limits for Upper extremities and Lower extremities, Trunk, and Neck
- Coordination
 - Finger to nose: Right= 6.9 seconds; Left= 7.25 seconds (cut-off = 10 seconds)
 - Toe tap: R= 3.25 seconds; L= 3.99 seconds (cut-off = 10 seconds)

Her friend has completed the Fitness to Drive Screening Measure (FTDS) yielding the following results

- Measure Score = 66.95 (cut point range 55.69-72.53)
- She is classified as a routine driver
- Identify the difficulties based on her keyform results [2s and 3s]
- Identify the Recommendations from her keyform?

She has completed an on-road test with the following results:

- Stops over stop lines at intersections
- Make wide turns and turn into the furthest lane
- Not maintaining lateral lane position as she drifts to the left, but can self-correct
- Not using turn signal consistently

CDRS Recommendation

- No highway driving
- Avoid rush hour traffic
- Instruction on where to stop in reference to stop line
- Instructions on use of the turn signals

What are your driving recommendations for Elizabeth? Provide a rationale

Can she continue to drive?	
Why/ why not?	
If so, with or without restrictions?	

What are the restrictions?	
If so, any follow-up sessions by the CDRS?	
Frequency & Intensity Time Type	

Use the results of the clinical tests, the on-road test, and the FTDS to develop an intervention plan for Elizabeth.

<ul style="list-style-type: none"> • Short-term goals 	
<ul style="list-style-type: none"> • Intermediate goals 	
<ul style="list-style-type: none"> • Long-term goals 	

Articulate your discharge plan

--

Fitness-to-Drive Screening Measure Online

Recommendations

[Also see](#)[Keyform Results](#)

Select parameters, then click **Update** to view recommendations.

Items: Sessions:

Total Item Responses: **49**

Outfit (mean-squared): **0.48**

Outfit (Z-score): **-1.84**

Infit (mean-squared): **0.65**

Infit (Z-score): **-1.47**

Person Measure: **66.95** out of 100 (*2.72 logits*)



Routine Driver

Overall rating: Based on your rating, this driver is classified within the "Routine Driver" Group and shows early signs of needing intervention. There are driving skills that are causing concern. For example:

1. Drive in a thunderstorm with heavy rains and wind?
2. Drive when there is glare or the sun is in his or her eyes?
3. Drive at night on a dark road with faded or absent lane lines?

Specific Recommendations: We recommend a doctor's appointment to start a conversation about conditions that may impact driving safety. The driver will also benefit from a comprehensive driving evaluation to address safety concerns. We do recommend repeating this self-screening annually, or when the driver experience changes in health or functional status.

General Recommendations: The American Geriatrics Society recommends a physical and eye exam annually, or earlier, when needed. We recommend taking

a class for mature drivers such as those offered by AAA, AARP or a local driving school.

For further details on driving or community mobility, click on the links below:

Resources:

AAA Resources for Mature Drivers

- *American Automobile Association (AAA)*
<http://seniordriving.aaa.com/>

AARP Driver Safety

- *AARP*
<http://www.aarp.org/drive>

Certified Driving Rehabilitation Specialists/ Occupational Therapists providing the Comprehensive Driving Evaluations

- *American Occupational Therapy Association*
http://myaota.aota.org/driver_search/
- *The Association for Driver Rehabilitation Specialists (ADED)*
<http://www.driver-ed.org/custom/directory/?pageid=209&showTitle=1>

Information and free resources to help you become more familiar with transportation resources and services available in your community.

- *National Center on Senior Transportation*
http://seniortransportation.easterseals.com/site/PageServer?pagename=NCST2_older

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Institute for Mobility, Activity and Participation (I-MAP)

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Fitness-to-Drive Screening Measure Online

Keyform Results

[Also see](#)
[Recommendations](#)

Select parameters, then click **Update** to build Keyform output.

Items: Sessions:
 Clustering: Show Responses:

Total Items: **49**

Outfit (mean-squared): **0.48**

Outfit (Z-score): **-1.84**

Infit (mean-squared): **0.65**

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					1		2		3		4	49 Drive glare
					1		2		3		4	48 Drive night absent lane lines
					1		2		3		4	35 Drive unfamiliar urban
					1		2		3		4	44 Drive unfamiliar area
					1		2		3		4	45 Drive at night
					1		2		3		4	47 Drive when fog
					1		2		3		4	26 Parallel park

1	2	3		4	34 Pass larger vehicle no passing In
1	2	3		4	42 Drive when upset
1	2	3		4	50 Turn L across lns no traf light
1	2	3		4	43 Stay focused
1	2	3		4	41 Alter driving health changes
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1	2	3	4		13 Change lns moderate traffic
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1	2	3	4		30 Look L&R bf crossing						
-----+-----+-----+-----+-----+-----+-----+-----											
0	10	20	30	40	50	60	70	80	90	100	